The Need for Rapid Acquisition Programs in the Army to Face an Adaptive Enemy

A Monograph

by

Major Andrew P. Brickson

United States Army

School of Advanced Military Studies

United States Army Command and General Staff College

Fort Leavenworth, Kansas

AY 06-07

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
24-05-2007	Monograph	July 2006 – May 2007

4. TITLE AND SUBTITLE

THE NEED FOR RAPID ACQUISITION PROGRAMS IN THE ARMY TO FACE AN ADAPTIVE ENEMY

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Brickson, Andrew P., Major, USA

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

School of Advanced Military Studies
ATTN: ATZL-SWV
250 Gibbon Avenue.
Ft. Leavenworth, KS 66027

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The purpose of this paper is to explore the necessity of having and maintaining a form of rapid acquisition capability within the Army. Future challenges envisioned by President Bush are presented to the United States military forces by an adaptive enemy during operations in support of the current Global War on Terrorism in Iraq and Afghanistan.

The Rapid Equipping Force (REF) and the Rapid Fielding Initiative (RFI) are two recent Army initiatives developed to bridge capability gaps outside the traditional acquisition cycle in order to successfully combat an adaptive enemy in wartime. Supported through large amounts of temporary GWOT supplemental verses planned funding as part of the Army's Program Objective Memorandum, REF and RFI provide necessary equipment to operational commanders during the Army's largest equipment fielding effort since World War II. Both organizations reside outside the normal traditional acquisition infrastructure of the Army but are complimentary in mission scope and nature.

These lessons learned from REF and RFI success demonstrate, at a minimum, the need to maintain and incorporate a system of rapid acquisition within the current Army acquisition process and the Army Force Generation in order to provide the best possible wartime support to tactical and operational commanders.

15. SUBJECT TERMS

Rapid Equipping Force, Rapid Fielding Initiative, Adaptive Enemy, Spiral Acquisition, Evolutionary Acquisition, Defense Acquisition Management Framework, Program Executive Office

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			Col Kevin C.M. Benson
Unclassified	Unclassified	Unclassified	UU	42	**19b. TELEPHONE NUMBER** *(include area code)*

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major Andrew P. Brickson

Title of Monograph: The Need for Rapid Acquisition Programs in the Army to Face an Adaptive Enemy

Approved by:

_____ Jacob W. Kipp, Ph.D.	Monograph Director
_____ Kevin C.M. Benson, COL, AR	Director, School of Advanced Military Studies
_____ Robert F. Baumann, Ph.D.	Director, Graduate Degree Programs

Abstract

THE NEED FOR RAPID ACQUISITION PROGRAMS IN THE ARMY TO FACE AN ADAPTIVE ENEMY by MAJ Andrew P. Brickson, US Army, 42 pages.

The purpose of this paper is to explore the necessity of having and maintaining a form of rapid acquisition capability within the Army. Future challenges envisioned by President Bush are presented to the United States military forces by an adaptive enemy during operations in support of the current Global War on Terrorism in Iraq and Afghanistan.

The Rapid Equipping Force (REF) and the Rapid Fielding Initiative (RFI) are two recent Army initiatives developed to bridge capability gaps outside the traditional acquisition cycle in order to successfully combat an adaptive enemy in wartime. Supported through large amounts of temporary GWOT supplemental verses planned funding as part of the Army's Program Objective Memorandum, REF and RFI provide necessary equipment to operational commanders during the Army's largest equipment fielding effort since World War II. Both organizations reside outside the normal traditional acquisition infrastructure of the Army but are complimentary in mission scope and nature.

These lessons learned from REF and RFI success demonstrate, at a minimum, the need to maintain and incorporate a system of rapid acquisition within the current Army acquisition process and the Army Force Generation in order to provide the best possible wartime support to tactical and operational commanders.

TABLE OF CONTENTS

Introduction

> The United States will . . . transform America's national security institutions to meet the challenges and opportunities of the twenty-first century.
>
> President George W. Bush
> September 2002.

> The Department currently is pursuing transformational business and planning practices such as adaptive planning, a more entrepreneurial, future-oriented capabilities-based resource allocation process, accelerated acquisition cycles built on spiral development, out-put based management, and a reformed analytic support agenda.
>
> Donald Rumsfeld, Former Secretary of Defense
> Transformation Planning Guidance, April 2003.

In 2002, the President of the United States gave the Department of Defense (DoD) specific guidance to implement a transformation strategy to become more effective in meeting the nation's future challenges and opportunities. A transformation strategy would comprise a future warfare vision to provide direction to transformation efforts, a selection of senior leaders based on their ability to effect transformational change, robust funding for leap-ahead technologies, Joint and Service field exercises and experimentation, a new procurement strategy, and divestment strategies to eliminate capabilities that are a poor fit with the emerging strategic environment, as well as to free up resources to support transformation.[1] A definition of transformation encompassing the intent of the administration is an innovation on a grand scale; sufficient to bring about a discontinuous leap in military effectiveness which could not be effected through processes established by the (DoD) to support and sustain the existing ways of operating.[2] The 2001/2002 Unified Command Plan made the United States Joint Forces Command (USJFCOM) responsible for the new transformational concepts required to build the

[1]Andrew Krepinevich, The Bush Administration's Call for Defense Transformation: A Congressional Guide, 19 June 2001, Available from http://www.csbaonline.org/4Publications/PubLibrary/H.20010619.The_Bush_Administr/H.20010619.The_Bush_Administr.php; Internet; accessed on 5 April 2007.

[2]Ibid.

military of the 21st century. USJFCOM refines the definition of military transformation as changing the form, or structure of the United States military forces; the nature of its military culture and doctrine supporting those forces; and streamlining the warfighting functions to more effectively meet the complexities of the new threats challenging the nation in the new millennium.[3]

The future challenges envisioned by President Bush are presented to the United States military forces by an adaptive enemy during operations in support of the current Global War on Terrorism (GWOT) in Iraq and Afghanistan. The Army's near-term priority to fight and win the GWOT has occupied the focus of the institutional army and dominated United States political arena. The Army's long-term focus continues to ensure it remains the world's preeminent land power that is both ready to meet and be relevant to the challenges of the dangerous and complex 21st century security environment which presents opportunities for friction between current and future equipment requirements.[4] Meeting these challenges during a state of persistent and protracted conflict while effectively protecting Soldiers, enhancing Soldier quality of life in the field, and producing a more lethal and effective force requires new initiatives and programs within the United States military services.

The Rapid Equipping Force (REF) and the Rapid Fielding Initiative (RFI) are two recent Army initiatives developed to bridge capability gaps outside the traditional acquisition cycle in order to successfully combat an adaptive enemy in wartime. Supported through large amounts of temporary GWOT supplemental verses planned funding as part of the Army's Program Objective Memorandum (POM), REF, and RFI provide necessary equipment to operational commanders

[3]United States Joint Force Command, What is Transformation, Available from http://www.jfcom.mil/about/transform.html; Internet; accessed on 5 April 2007.

[4]US Department of the Army, *2006 Posture Statement* (Washington, DC: Government Printing Office, 2006), ii.

during the Army's largest equipment fielding effort since World War II.[5] Both organizations reside outside the normal traditional acquisition infrastructure of the Army but are complimentary in mission scope and nature. The success of these two organizations is well documented in unit after action reviews, mission reports, commander feedback, and Soldiers' statements. On 19 July 2006, Sergeant Christopher B. McWilliams of the New Hampshire Army National Guard, illustrated the typical Soldier gratitude of receiving RFI and REF equipment in his statement to the Commission on the National Guard and Reserves.

> Interceptor Body Armor (IBA) is an outstanding piece of equipment. It is much more functional than previous types of armor and much more dependable. It saved my life. The Dorsal Appendage Protective System (DAPS) is an extra issue item for the IBA that provides protection to the upper shoulder, and bicep, and only adds to the ballistic coverage of the vest. It works well. The M1114 Up armored HMMWV's are outstanding. They take an incredible amount of damage without failing.

These lessons learned from REF and RFI success demonstrate, at a minimum, the need to maintain and incorporate a system of rapid acquisition within the current Army acquisition process and the Army Force Generation (ARFORGEN) in order to provide the best possible wartime support to tactical and operational commanders. The purpose of this monograph is to research the necessity of the Army possessing a rapid and scaleable acquisition process which can provide the equipment and materials necessary to counter the efforts of an adaptive enemy during future conflicts.

The development and subsequent congressional supplemental funding of the REF and RFI is closely tied to the leadership and directives of the former and current Chief of Staff of the Army in response to identified Soldier and Army equipment requirements during current operations in Iraq and Afghanistan. The question of what happens to REF and RFI upon conclusion of the United States' operations in these countries and the ending of supplemental funding will be critical in determining its capability in facing a new future adaptive enemy. If the

[5]Program Executive Officer Soldier, The Army's Rapid Fielding Initiative Delivers, Available from https://www.peosoldier.army.mil/docs/rfidelivers.pdf; Internet; accessed on 12 January 2007.

United States Army returns solely to a pre-Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF) acquisition process which is lengthy and ponderous, the Army could face a future conflict without the ability to successfully react to a rapidly changing environment and adaptive enemy. The Army 2006 Posture Statement illustrates several areas in which the REF and RFI initiatives have provided equipment which has increased the Army's capabilities in Iraq and Afghanistan.

Equipping Our Soldiers: Soldier Protection Programs in Iraq and Afghanistan

AREA	WHERE WE WERE SEPTEMBER 2003	WHERE WE WERE JANUARY 2005	WHERE WE WERE JANUARY 2006
Body Armor	Estimated 10 percent of Soldiers in Iraq equipped	All Soldiers and DoD civilians in theater equipped; plus 60,000 Deltoid Axillary Protectors issued	All Soldiers and DoD civilians in theater equipped; total of 693,000 Body Armor sets fielded; plus 173,000 Deltoid Axillary Protector sets issued
Up-Armored HMMWVs	500 Up-Armored HMMWVs in Iraq and Afghanistan	More than 6,400 Up-Armored HMMWVs in Iraq and Afghanistan	More than 11,100 Up-Armored HMMWVs in Iraq and Afghanistan
Tactical Wheeled Vehicle Add-on-Armor Kit	Contingency mission only	More than 19,000 vehicles in theater have Add-on-Armor-kits	More than 37,500 vehicles in theater have Add-on-Armor kits
Armored Security Vehicle (ASV)	No ASVs in theater	Resurrected a terminated program; 82 ASVs in theater	194 ASVs in theater
Bradley Reactive Armor Tile (Brat)	140 sets delivered; acceleration plan in execution	592 sets delivered	790 sets delivered; acceleration plan in execution
Counter-IED Device	Minimal capability in theater	1,496 systems in theater	More than 23,000 systems in theater
Tactical and Small Unmanned Aircraft Systems	Two systems deployed to theater	128 systems in theater	155 systems in theater
Aircraft Survivability Equipment (ASE)	No fixed-wing ASE; in process of upgrading Blackhawk and Chinook aircraft with basic ASE	All theater aircraft upgraded with basic ASE	All theater rotary wing aircraft to be upgraded with Latest Common Missile Warning System
Buffalo	No systems deployed in theater	No systems deployed in theater	44 systems deployed

Figure 1. Equipping Our Soldiers: Soldier Protection Programs in Iraq and Afghanistan
Source: US Department of the Army, *Army 2006 Posture Statement* (Washington, DC: Government Printing Office, 2006), 16.

The adaptive enemy in an operational environment like in Iraq and Afghanistan has its own rapid development cycle of increasingly dangerous means to threaten United States forces. The threat continues to evolve in these countries starting with the use of simple and rudimentary

improvised explosive devices (IEDs) to sophisticated platter charge IEDs designed to defeat the Army's upgraded armor efforts on wheeled and tracked vehicles and lately the use of poisonous gases. United States Army units address these evolving threats with new tactics and procedures. The new tactics and procedures are usually accompanied with a need for a new capability in order to be more effective. REF and RFI currently provide the means to address that capability gap. Future conflicts involving the United States Army and an adaptive enemy will involve similar scenarios that require an equipment capability not existing in the current force structure.

Chapter One summarizes the wartime current acquisition process which is still future focused and peace time orientated. The traditional Army acquisition process is unlike the tactical or installation support world because it has historically not planned to conduct acquisition operations in a wartime environment. There are three key unknowns in peacetime that drive the majority of the Army's acquisition efforts: the identity of the enemy, the location of the enemy, and the force structure of the Army when conflict begins. All three of these key unknowns can become identified during wartime which allows the Army acquisition process to become more focused and reactive to operational needs, but it still remains ponderous, lengthy, and not necessarily completely responsive to operational commanders.

Chapter Two summarizes the Army's REF. It will also introduce several key terms and concepts in current fielding and equipping doctrine. The first section will provide a brief overview of the REF's history. The second section will state its mission and methodology. The subsequent sections will detail the different methodologies of the REF mission: Equipping, Insertion, and Assessing. The final section will detail the integration of REF and Training and Doctrine Command (TRADOC) and illustrate the benefits of this relationship.

Chapter Three summarizes the Army's RFI under the Program Executive Officer Soldier (PEO). The RFI was based on lessons learned during Operation Enduring Freedom in 2002. It was intended to supplement unit and Soldier equipment with essential identified capabilities required for success during operations. The initiative has been extremely successful because it has

provided an abundance of mission essential equipment to deploying units in a short time period verses the lengthy time characteristics of the traditional acquisition process. A central component of RFI is the concept of spiral development. RFI uses spiral development to select rapidly developed technologies for additional focus in order put that technology in the field today with Soldiers verses years in the future. RFI is dependent upon supplemental funding which currently ends in Fiscal Year (FY) 2007.

Chapter Four provides recommendations on the necessary path ahead for Army equipment acquisition based on several key assumptions. The future will undoubtedly include combat against a future adaptive enemy with the United States military forces under a certain budgetary constraint. The question that needs to be addressed is whether the Army, as an institution, will be prepared to respond in terms of addressing gaps in capabilities. The *2006 Posture Statement* states "supplemental funding is required for combat and contingency operations . . . these resources will ensure that the Army is fully staffed, trained, and equipped to achieve victory in the war on terrorism."[6] The sole reliance on supplemental funding could possibly result in a future acquisition period that is not necessarily capable of responding to an adaptive enemy.

Chapter One: Army Acquisition and Procurement

This chapter provides a summary of the structured and complicated process of Army acquisition. It is a process that is bounded by legal constraints and not originally designed to field equipment during an active period of combat operations. Army Regulation (AR) 70-1, *Army Acquisition Policy*, and AR 71-9, *Material Requirements*, exhaustively details the complicated acquisition process. Army acquisition is just one of the service components utilizing the Department of Defense Acquisition System (DDAS). The DDAS fields equipment to the total force and is responsible for the monumental task of working within the funding constraints placed

[6]US Department of the Army, *2006 Posture Statement*, V

upon the Department of Defense by Congress. It is critical to understand that in the acquisition process in Washington there are three major top-level participants: the Executive Branch, the Congress, and the defense industry. The different participants do not necessary have the same goals, perspectives, responsibilities, and objectives as their counterparts.[7] Regardless of political, military, and public interactions during the purchase of new systems for the United States military forces, the process is lengthy, detailed, and deals with the life cycle acquisition model. The whole process can take upwards of seven years.

National Level Participates in the Acquisition Process

The Legislative Branch's oversight of the defense acquisition process begins with several congressional committees. The Senate Armed Services Committee and the House Armed Services Committee authorize defense programs. The House Appropriations Committee and Senate Appropriations Committee appropriate funds for all federal programs, including defense. The Senate and House Budget Committees set spending limits for national defense. Additionally, there are various other congressional offices which have legislative oversight of defense activities, including the Congressional Budget Office, and the Government Accountability Office. Finally, the individual members of Congress each have a keen interest in the financial incentives that military acquisitions might bring to their districts or states. The major participants within the Executive Branch include the President, the Office of Management and Budget, the National Security Council, and DoD. It is the Office of Management and Budget which prepares the document that the Executive Branch submits to Congress each year as the President's proposed budget. The third participant is the multibillion dollar defense industry which actually provides

[7]Defense Acquisition University, *Introduction to Defense Acquisition Management*, 7th ed. (Fort Belvoir, VA: Defense Acquisition University Press, 2005), 3. Available from http://www.dau.mil/pubs/gdbks/Intro_2Def_Acq_Mgmt_7th_Ed.pdf; Internet; access on 18 March 2007.

the goods and services to DoD. The defense industry includes both small and large firms involved in military procurement. These companies are both US and foreign firms.[8]

Army Leadership and Structure

The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT), who serves when delegated as the Army Acquisition Executive, the Senior Procurement Executive, the Science Advisor to the Secretary, and as the senior research and development official for the Department of the Army, leads the Army acquisition process. ASAALT also has the principal responsibility for all Army matters related to logistics and material acquisition. The ASAALT appoints, manages, and evaluates the PEOs and Program Managers (PMs). The highest ranking uniformed official in Army acquisition is the ASAALT Military Deputy (MILDEP) which is a filled by a Lieutenant General.

Department of Defense Acquisition System

The Defense Acquisition System exists to manage and guides all DoD acquisition programs to achieve the National Security Strategy and support the United States Armed Forces. Its objective is to rapidly acquire quality products that satisfy user needs with measurable improvements to mission capability at a fair and reasonable price. The fundamental principles and procedures that the DoD follows in achieving those objectives are described in DoD Directive 5000.1 and DoD Instruction 5000.2. DoD Directive 5000.1, *The Defense Acquisition System,* provides the policies and principles that govern the defense acquisition system. DoD Instruction 5000.2, *Operation of the Defense Acquisition System,* establishes the management framework that implements these policies and principles. A key principle of the defense acquisition system is the use of acquisition program categories. There are categories in which programs of increasing dollar value and management interest are subject to more stringent oversight by leadership. The

[8]Ibid., 4.

most expensive programs are known as Major Defense Acquisition Programs (MDAPs) or as Major Automated Information Systems (MAIS). A MDAP is defined as an acquisition program that is designated by the Under Secretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)) or estimated by the USD(AT&L) to require an eventual total expenditure for Research, Development, Test and Evaluation (RDT&E) of more than $365 million in FY 2000 constant dollars or, for procurement of more than $2.19 billion in FY 2000 constant dollars.[9] These major programs have the most extensive statutory and regulatory reporting requirements. In addition, elements of the defense acquisition system are applicable only to weapon systems, only to information systems or applicable to both.

Defense Acquisition Management Framework

The new Defense Acquisition Management Framework (DAMF) detailed in the 2006 Army Modernization Plan provides an event-based process during which acquisition programs precede through an acquisition life cycle consisting of a series of deliberate milestones and decision points associated with significant program phases. The phases of the DAMF include the Concept Refinement, Technology Development, System Development and Demonstration, Production and Deployment, and Operations and Support. The DAMF has three critical decision points. The Concept Decision approves entry into the Concept Refinement phase. The Design Readiness Review ends the System Integration effort and continues the System Development and Demonstration phase into the System Demonstration effort. The Full Rate Production Decision Review occurs at the end of the Low Rate Initial Production effort of the Production and Deployment phase that authorizes Full Rate Production and approves deployment of the system to the field.

[9]Defense Acquisition University, *Glossary: Defense Acquisition Acronyms and Terms*, 12th ed. (Fort Belvoir, VA: Defense Acquisition University Press, July 2005). Available from http://akss.dau.mil/jsp/glossary.pdf; Internet; accessed on 15 March 2007.

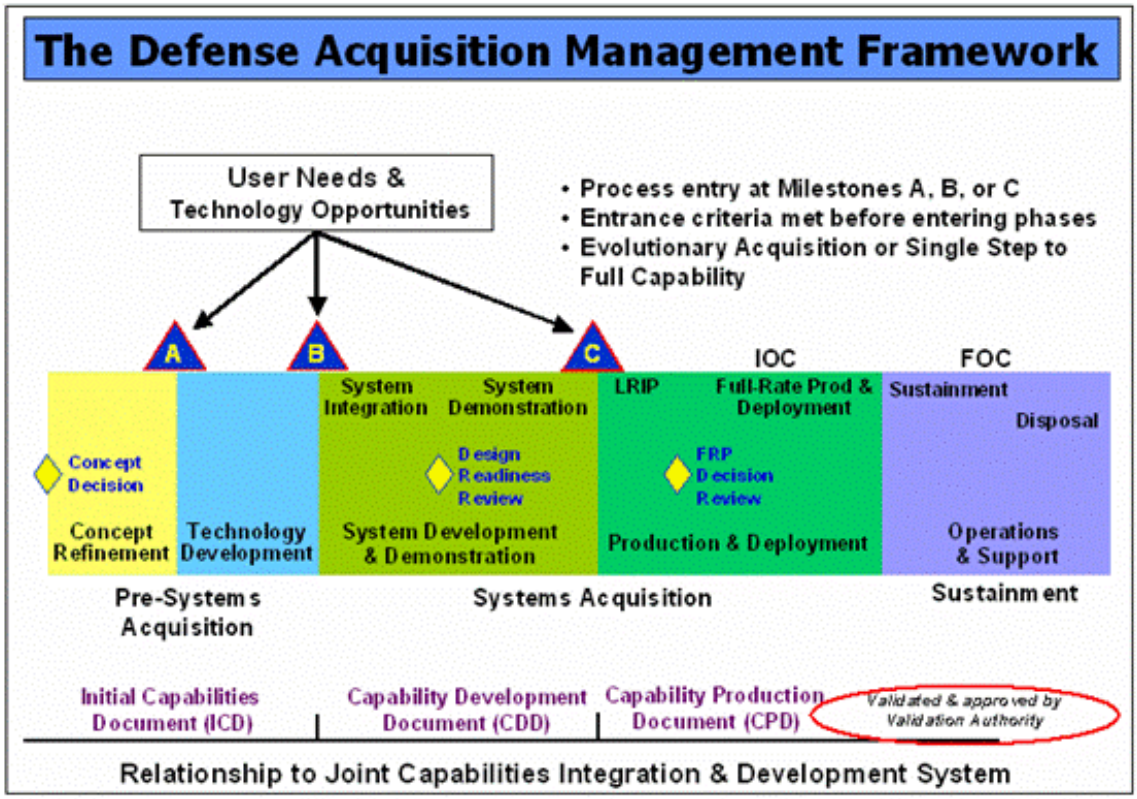

Figure 2. Defense Acquisition Management Framework
Source: Department of Defense, Acquisition University, Defense Acquisition Guidebook, Available from http://akss.dau.mil/dag/DoD5000.asp?view=document&rf=DoD5002\Figure1.asp; Internet; accessed on 25 February 2007.

The management framework for defense systems acquisition is commonly referred to as the acquisition life cycle. PMs tailor/streamline this model to the maximum extent possible, consistent with technical risk, to promptly provide new systems to the warfighter. The process provides for multiple entry points consistent with a program's technical maturity, validated requirements, and funding. Entrance criteria for each phase of the life cycle guide the Milestone Decision Authority (MDA) in determining the appropriate point for a program to enter the acquisition process.[10]

[10]Defense Acquisition University, *Introduction to Defense Acquisition Management*, 49.

The life cycle process consists of periods of time called phases separated by decision points called milestones. Some phases are divided into two efforts separated by program reviews. These milestones and other decision points provide both the PM and MDAs the framework with which to review acquisition programs, monitor and administer progress, identify problems, and make corrections. The MDA will approve entrance into the appropriate phase or effort of the acquisition process by signing an acquisition decision memorandum upon completion of a successful decision review.[11]

The life cycle of a program begins with planning to satisfy a mission need before the program officially begins. Each program structure is unique because it must be based on that program's unique set of requirements and available technology. Program initiation normally occurs at Milestone B. The life cycle process takes the program through research, development, production, deployment, support, upgrade, and finally, demilitarization and disposal. Initial Operational Capability (IOC) is that point at which a selected number of operational forces have received the new system and are capable of conducting and supporting warfighting operations. References to "life cycle costs" in defense acquisition include all costs associated with the system, from "cradle to grave."[12] The process of adjusting the life cycle to a specific set of circumstances or environment is often referred to as "tailoring." The number of phases, key activities, and decision points are tailored by the PM based on an objective assessment of the program's technical maturity and risks, and the urgency of the mission need.[13]

Evolutionary Acquisition

Evolutionary acquisition is the DoD-preferred strategy being used by the Army to rapidly acquire materiel systems with mature technologies capabilities in increments, with the recognition that future improvements in capability will be needed. The objective is to balance needs and

[11]Ibid., 50.
[12]Ibid.
[13]Ibid., 51.

available capability with resources, and to put capability into the hands of the user quickly. Success of this strategy depends on consistent and continuous definition of requirements, continuous collaboration between the user, tester, and developer to develop and produce systems with increasing capability towards a materiel concept. The below figure depicts the evolutionary requirements and acquisition process.[14]

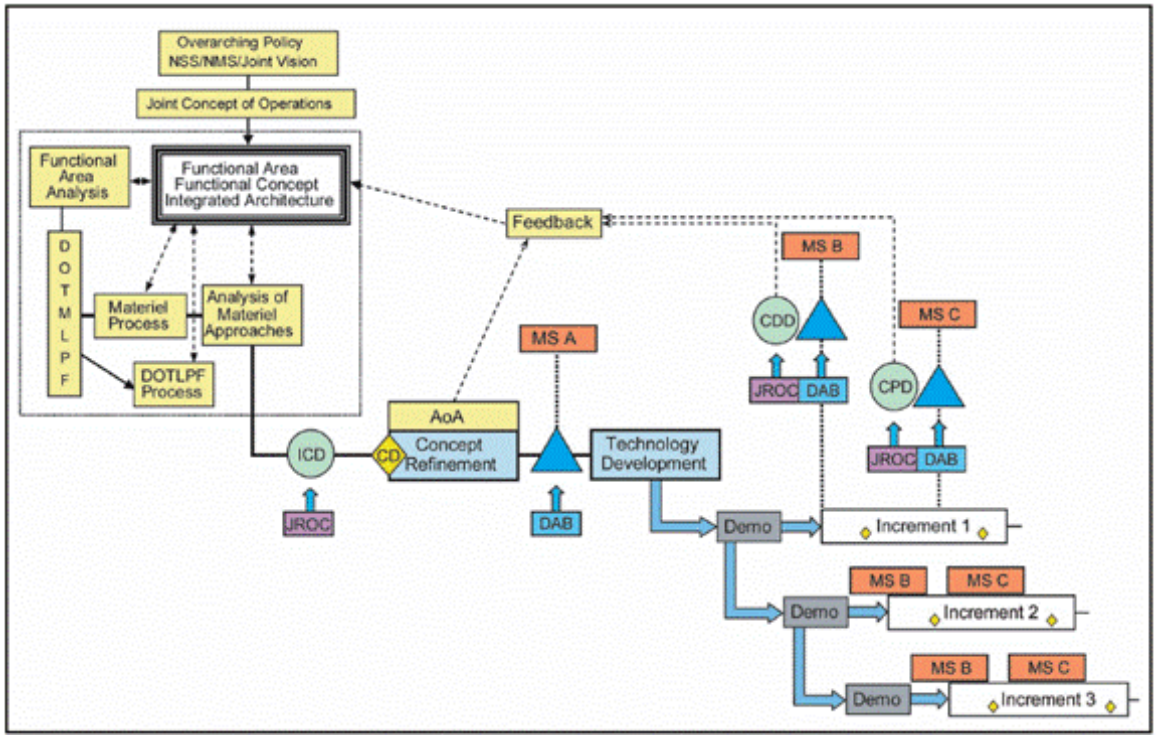

Figure 3. Evolutionary Requirements and Acquisition Process
Source: United States Army, 2006 Army Modernization Plan, Available from http://www.army.mil/ features/MODPlan/2006/; Internet; accessed on 15 March, 2007.

Evolutionary acquisition uses two key processes. The processes are incremental development and spiral or iterative development and insertions. These processes provide for continuous discovery and development of technology for military applications that enhance Joint

[14]Department of the Army, 2006 Army Modernization Plan, Available from http://www.army.mil/features/MODPlan/2006/; Internet; accessed on 15 March, 2007.

Force capabilities. Through the incremental development process, a desired capability is identified and the required end state is defined. That requirement is met over time by the development of several increments, each dependent on available mature technology. The requirement for future increments is based upon the ability to fill the gap between the current capability and the objective capability (100 percent design concept) for a system. Through the spiral or iterative development and insertion process, a desired capability is identified, but the end-state requirements are unknown at program initiation. Those requirements are refined through experimentation, risk management, and continuous user feedback to provide the best possible capability within an increment. The requirement for future iterative development and insertion depends on user feedback and technology maturation. The key success factor in spiral development is a strong risk management and identification process since the model prototypes and/or builds hard (for example, high-risk items) first in an intentional attempt to wring the risks out of system development as early as possible.[15]

Both incremental and spiral or iterative development and insertion require close coordination between material and training developers to ensure training products and plans are developed to support the new capabilities provided by each increment and any iterative developments and insertions applied outside an increment cycle to existing systems.[16]

Army Program Executive Offices

The Army groups its acquisition programs by function under one of eleven program executive offices to implement a piece of equipment acquisition life cycle. Each office is directed by a PEO, and the PEOs provide oversight for a group of related programs. The history of PEOs originated when the Army Materiel Command (AMC) was initially created in 1962, during the Secretary of Defense McNamara's DoD reforms. Thirty-six PM offices were established to

[15]Ibid.
[16]Ibid.

manage the development of major weapons systems and equipment. Prior to 1962, PMs were mostly used by the American Industry community and not within DoD. The May 1987 implementation of the *Goldwater-Nichols DoD Reorganization Act of 1986* removed PMs from AMC control and placed them under PEOs, who reported directly to the Assistant Secretary of the Army for Research, Development, and Acquisition. PEOs can be senior military officers or civilian members of the government's senior executive service (SES).

PEOs serve as the materiel developers, responsible for programmatic and the various aspects of planning and budgeting required for their assigned programs to move through the applicable milestones. In addition to their many other duties, PEOs are also responsible for technical and functional integration across their assigned programs.[17] The DoD Acquisition Career Development Program defines PEO qualifications. Generally, before assignment, PEOs must have completed specific levels of training, must have been assigned to a PM or deputy PM position during their careers, and must have had at least ten years of acquisition experience (with four of those being in a critical acquisition position).[18] The Program Executive Offices consist of the eleven following offices:

Table 1 PEO Offices

Missiles and Space (MS)	Enterprise Information Systems (EIS)
Ammunition (Ammo)	Ground Combat Systems (GCS)
Aviation (AVN)	Intelligence, Electronic Warfare and Sensors (IEW&S)
Chemical and Biological Defense (CBD)	Soldier

[17]Department of the Army, Army Regulation 70-1, *Army Acquisition Policy* (Washington, DC: Government Printing Office, 2003), 45.

[18]US Department of Defense, DoD 5000.52-M, *Acquisition Career Development Program* (1995); Available from http://www.dtic.mil/whs/directives/corres/pdf2/p500052m.pdf; Internet; accessed on 15 March 2007.

Combat Support and Combat Service Support (CS&CSS)	Simulation, Training, and Instrumentation (STRI)
Command, Control and Communications Tactical (C3T)	

Chapter Two: Rapid Equipping Force Summary

> We tell commanders: 'If you're not as effective in your environment as you want to be—whether it's because of a force protection issue, a weapons issue or a deployment issue—we will try to find solutions that make you more effective. [19]
>
> Colonel Bruce Jette, Former REF Director

Established in the beginning of 2002, the REF is an operational activity which receives its guidance from the Army G-3 and reports directly to the Vice Chief of Staff of the Army. The REF is a Staff Support Agency assigned to the Army Asymmetric Warfare Office. Its mission is to rapidly provide combat commanders with solutions that increase lethality, improve force protection, and enhance survivability. The REF accomplishes its mission by working in partnership with industry, academia, Army senior leaders, the United States Army Training and Doctrine Command, the Army acquisition community, and the Army Test and Evaluation Command. REF does not duplicate the existing military supply chain system, handle basic issue items, or supply items that units can research and order on their own within the current Army acquisition system.

The REF focuses on solving specific problems for individual units rather than fielding equipment to the entire force to meet general problems. A fundamental categorization of the REF as a theater specific equipping solution instead of a fielding solution enables REF to follow

[19]Ted Kennedy, "2005 TRADOC Seeks Wartime Solutions From Rapid Equipping Force," *Army Magazine* (August 2004): 29.

different procurement rules.[20] The REF works directly with operational commanders through deployed REF teams to find solutions to their specific equipment requirements in order to become more effective.[21] The current Director of REF is Colonel Gregory N. Tubbs.

Rapid Equipping Force's Origins

In June of 2002, General John M. Keane, then the Army Vice Chief of Staff, requested that Colonel Bruce Jette address the problem facing Soldiers in Afghanistan searching for caves. The Afghanistan mountainous terrain included thousands of caves used to cache supplies and provided cover and concealment. These caves had booby-traps and trip wires which made the manual searching of the caves extremely dangerous to Soldiers. The tactic used at that time involved using old fashion ropes and grapple hooks which was a carryover from cave searching techniques used in Vietnam.

Jette had recently been successful in leading the Land Warrior program by incorporating the use of commercial off the shelf (COTS) components to address problems within the program. Jette used a COTS methodology to address technology issues in the Land Warrior Program which had reduced the cost of each Land Warrior system by an estimated two thirds. Jette utilized the COTS methodology and rapidly found a solution to the cave searching problem by recommending the iRobot. The iRobot was a briefcase sized device developed by the Defense Advanced Research Projects to dispose of ordinance, munitions, and search and rescue operations. Keane deployed Jette to Afghanistan under a program called Rapid Integration of Robot Systems (RIRS) to put the iRobot into operation in support of Soldiers. The success of

[20]Tim Kennedy, "Rapid Fielding Team Tasked to Transform Army Acquisition," *National Defense Magazine* (February 2004): 1.

[21]Department of the Army, *2006 Posture Statement*, 16.

RIRS led Keane to stand up the REF under a one year mandate "to determine if the Army's equipping needs, across a broad spectrum, could be met more quickly."[22]

Rapid Equipping Force's Mission

In the summer of 2003, The Army Chief of Staff, General Peter J. Schoomaker, directed Jette, then REF Director, to apply REF's rapid equipping methodologies to the Army's Future Force in order to insert emerging concepts and technologies now rather than later. Jette developed the following Guidance Slide based on Schoomaker's initial hand drawn guidance.

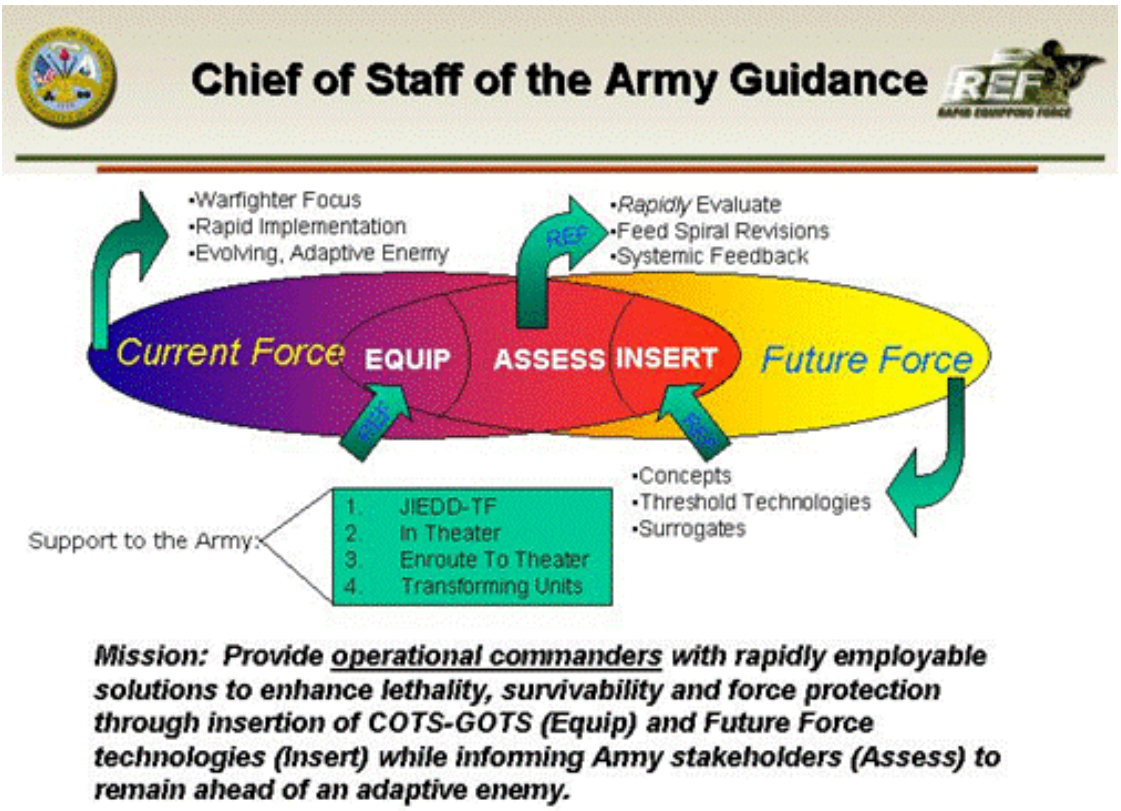

Figure 4. Chief of Staff of the Army Guidance
Source: National Defense Industrial Association, Rapid Equipping Force Overview; Available from http://www. ndia-mich.org/events/logistics/day_three/COL%20Lovett%20-%20PM%20REF.ppt; Internet; accessed on 15 March, 2007.

[22]Lawrence P. Farrell, "Technology Base Focused on 'Rapid Fielding' Efforts," *National Defense* (August 2003): 6.

The REF's mission has three components: equipping, insertion, and assessing. REF equips operational commanders with off-the-shelf (government or commercial) solutions or near-term developmental items that can be researched, developed and acquired quickly. The REF integrates future force technology solutions that our engaged and deploying forces require. It does this by developing, testing, and evaluating key technologies and systems under operational conditions. The insertion methodology of REF requires close interaction with a host of agencies across DoD and the civilian industries. REF works closely with TRADOC, the acquisition community, the Futures Center, and the deploying unit to assess available technologies and equipment which can be pulled forward into the current force for use against today's wartime requirements from labs, science and technology databases, or infrastructure. The REF assesses capabilities and advises key Army leaders of findings that will enable United States forces to rapidly confront an adaptive enemy.[23]

Rapid Equipping Force's Equipping verses Acquisition Fielding

Equipping is different than fielding within the Army context. Equipping is a timely and evolvable rapid solution meeting or exceeding minimum Doctrine, Organization, Training, Materials, Leadership, Personnel, and Facilities (DOTMLPF) issues and usually focuses on the needs of a specific unit or theater. Fielding is a complete and detailed DOTMLPF approach which focuses on a general solution for the entire Army force. The Army Acquisition community is responsible for fielding equipment to the force. The REF's role is to address the immediate warfighter needs by directly equipping a warfighter and then working the transition to a professional project manager within the acquisition army community in order to integrate the complete logistical tail piece of a piece of the new piece of equipment into the force.

[23]US Army Rapid Equipment Fielding, webpage, Available from http://www.ref.army.mil/textonly/default.html; Internet; accessed on 5 April 2007.

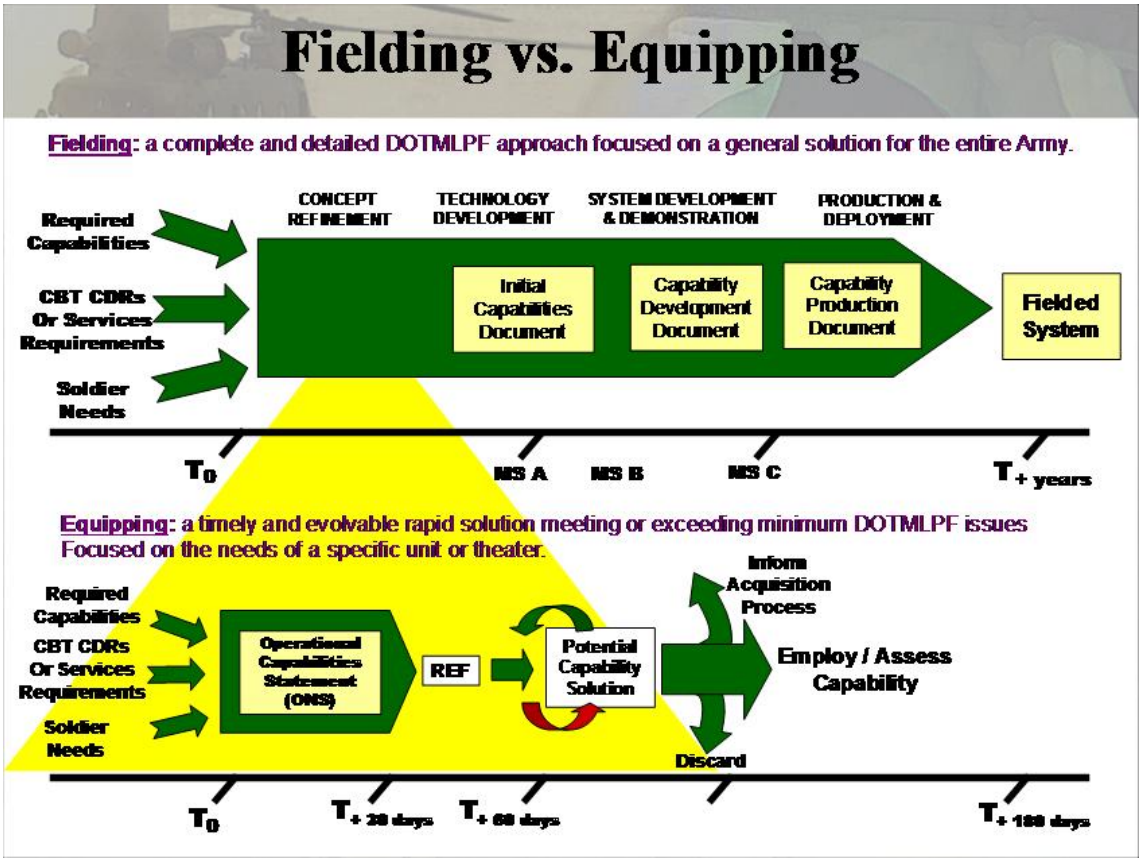

Figure 5. Fielding vs. Equipping

Source: Center for Strategic and International Studies Conference Briefing Slide. "The Changing Needs of the Services and the Warfighter," A Panel Discussion. BG(P) Jeff Sorenson, Deputy for Systems Management, Office of the Assistant Secretary of the Army, 8 December 2004

The Army concept of fielding consists of several fielding categories. Army Regulation 700-142, Chapter 4 says "Materiel fielding is the process of planning, coordinating, and executing the deployment of a materiel system and its support. . . . Total Package Fielding (TFP) is the Army's standard fielding process used to field Army systems." Army Regulation 700-142 defines total package fielding as "The Army process to affect a total system fielding of new and modified equipment. It provides for the concurrent fielding of a materiel system and all its required support. The process aims at minimizing the logistics burden of fielding on the gaining MACOM." Army Pamphlet 700–56, Chapter 6 also discusses TFP "The Army's process for materiel fielding," saying, "TPF is the Army's standard fielding process (AR 700–142 and DA

Pam 700–142). The TPF process is designed to ensure thorough coordination among the material developer (MATDEV), the combat developer (CBTDEV), the gaining Army commands and units in planning the system fielding. It also results in Army units receiving a complete system including all support equipment, manuals, and training required to operate and support the system. All TPF activity will be documented in the Total Army Fielding System Website." Army Pamphlet, PAM 700–56 defines Unit set fielding in Para 6–5. as "a disciplined, synchronized approach that focuses on fielding a "system of systems" configured in unit sets which provide to units a fully integrated operational capability. Army Regulation 70-1 states "Unit set fielding (USF) is a disciplined systems modernization approach that fields multiple systems with associated software to units during a single modernization window."

USF involves the synchronization of individual system fielding plans into a single unit fielding schedule to streamline the fielding process. USF represents an important shift toward providing improved capabilities as a package to organizations and not just fielding isolated systems. As part of a coordinated array, this disciplined modernization strategy goes beyond just equipping Army units. It incorporates the manning, sustaining, training, organization and installation requirements to ensure that an increased capability is being fielded, and not just pieces of equipment, in order to increase overall force effectiveness. It is the mechanism by which the Army has transformed its brigades into Brigade Combat Teams (BCT). A prominent example of USF is the fielding of the Stryker Brigade Combat Teams (SBCT) with a family of new Stryker Armored Vehicles and advanced information technologies.

Rapid Fielding Force Success

They are many instances were REF has equipped units and individuals in the field with items and technologies that have provided immediate increase in combat effectiveness. The initial versions and examples are routinely improved upon and newer versions of the piece of equipment issued to follow-on Soldiers. However, the speed in getting the first pieces of gear out to Soldiers

can have immediate positive effects verses waiting for a "final" version. For example, a Private First Class wearing the initial version of the face shield issued through rapid equipping fielding was struck by shrapnel. The face shield prevented the soldier from receiving a potentially fatal head wound.[24] The face shield has been improved since the first version types but the success of one live saving event clearly demonstrates the worthiness of getting the equipment out to the troops as soon as possible while more advance versions follow-up the initial versions.

The initial robotic mission of REF has emerged as a large effort in both Iraq and Afghanistan. These robots are small, remote-control sensor-equipped tracked vehicles that weigh only 42 pounds and can be operated by one person. One example is the Marcbots which are multifunction agile remote-control robots. These robots are designed for small sized units of squad to platoon level missions. In 2004, REF fielded the Marcbot 1. The robot is now on its fourth iteration of significant improvement and Soldiers now have the Marcbot 4. These advances represent how the REF can improve technology because of insertion. "We initially put in 32 robots costing about $6,000 apiece, and they were sorry," Colonel Tubbs relates. "But one of those robots in one week interrogated thirty-two potential IEDs, and of those twenty-six turned out to be IEDs.[25] Another highly visible success story involves the popular Raven unmanned aerial vehicle (UAV) program. The ability of operational commanders to be able to provide down to the lowest tactical level the ability to conduct aerial reconnaissance and tactical imagery sets the conditions for tactical commanders to be more effective in accomplishing their missions.

[24]Robert K. Ackerman, "Dedicated Army Force Speeds Technology To Warfighters," *Signal* (June 2006): 57.

[25]Ibid., 58.

Figure 6. Rapid Equipping Force Success
Source: National Defense Industrial Association, Rapid Equipping Force Overview, Available from http://www.ndia-mich.org/events/logistics/day_three/COL%20Lovett%20-%20PM%20REF.ppt; Internet; accessed on 15 March, 2007.

Integration with Training and Doctrine Command (TRADOC)

The mission Schoomaker gave to the REF resulted in a close working relationship with the TRADOC mission since it involves the TRADOC components of training development, doctrine development, and combat development. REF maintains close liaisons within TRADOC to facilitate its mission to support the warfighter. "The focus of REF's partnership with CAC is to reinforce pre-deployment training at combat training centers as well as finding technologies available now that can be inserted into the Army's battle command systems."[26] REF process still

[26]Joe Henry, "REF Strategic Plans Consultant," *Army Magazine* (August 2004): 40.

involves going through the Doctrine, Organization, Training, Materials, Leadership, Personnel, and Facilities process which means the interaction between TRADOC and REF is critical for the continued success of REF. REF's utilization of spiral technologies from programs to respond to current operational needs enables them to not only reap the benefit of using the technology today but also assist in validating that technology. If the technology is not ready or fails, REF can prevent the possible waste of valuable resources by confirming early in the regular acquisition process that the technology is not feasible. It is in effect a field trial of that particular piece of technology. REF becomes a valuable part of the development of the future force through this ability to provide feedback to TRADOC.

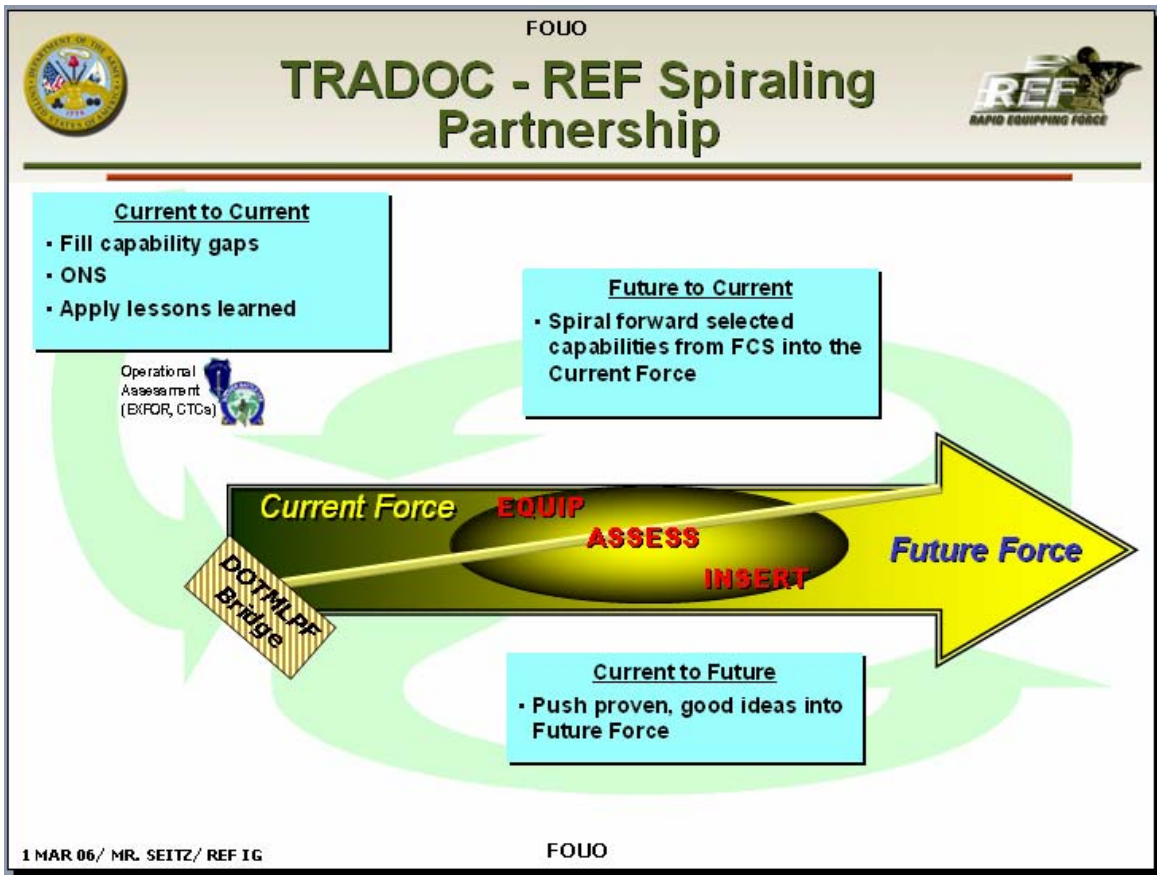

Figure 7. TRADOC – Rapid Equipping Force Spiraling Partnership
Source: National Defense Industrial Association, Rapid Equipping Force Overview, Available from www.ndia-mich.org/events/logistics/day_three/COL%20Lovett%20-%20PM%20REF.ppt; Internet; accessed on 4 May, 2007.

Chapter Three: Rapid Fielding Initiative Summary

The RFI equipment issued to Soldiers reflects and addresses the lessons learned during three years of fighting in complex environments. RFI issued equipment includes such items as optical sights for weapons, grappling hooks, door rams, fiber optic viewers, advanced ballistic helmets, hydration systems, ballistic goggles, knee and elbow pads, and an improved first aid kit. RFI initially provided 15 field items to the 1st Brigade, 82nd Airborne Division in November 2002. The RFI list expanded to 18 separate items for units in FY 2003. Units and Soldiers continually identified additional requirements resulting in the expansion of the list to 49 items in FY 2004 and finally to its current total number of 58 items of equipment. The RFI equipment issue is scheduled by the Department of the Army for completion by the end of September 2007, to coincide with the FY and ending of funding.[27]

Rapid Fielding Initiative's Initial Beginning

RFI has its origin during combat operations in Afghanistan. In the first year of that conflict, Soldiers reported equipment shortfalls and inadequacies during the conduct of their missions. The operating environment of Afghanistan consisted of high mountains, diverse ethnicity, extensive cave networks, mines, intense winter cold, and a blistering summer heat. Unit communications in Afghanistan were hampered due to the mountainous terrain that covers the majority of the country. United States military operations evolved from initial Special Operations deployments to conventional unit deployments. The missions of searching and destroying Taliban forces demanded different types of lightweight equipment and new forms of force protection gear not normally assigned to a regular Army unit. Many Soldiers displaying initiative in seeking solution to these shortfalls but faced frustration with the supply system and turned to acquiring pieces of needed field gear by personal purchases from commercial sources. At that time, Chief

[27] Department of the Army, *2006 Posture Statement*, 16.

of Staff Army (CSA), General John Keane directed Brigadier General Jamey Moran, the Director of PEO Soldier, to address equipment shortcomings and effectiveness of deployed Soldiers fighting in the GWOT.[28] Moran took the mission from Keane and quickly established the RFI program within the PEO Soldier organization.

Initially, the unit commanders and senior non-commissioned officers from 82nd Airborne and 101st Air Assault Divisions provided the first core list of equipment representing the wide spectrum of equipment their Soldiers identified as being inadequate or not effective. This feedback led to the first generation of RFI equipment distributed in FY 2003 consisting of 18 items. The first brigade was "RFI'd" within 45 days.[29] The initial funding for RFI beginning in November of 2002, was from the internal reallocation of $11 million of funding within the PEO Soldier organization. The organization structure of the RFI program would expand to consist of an Iraq Operations Section, an Afghanistan Operations Section, and a Continental United States (CONUS) Team (1-5) Section. These sections addressed the equipment requirements and equipment issue process to units both overseas and within the continental United States based on pre-deployed unit equipment requests. The following two slides are from a presentation, prepared based on initial surveys, commander and Soldier feedback briefed in early February of 2003.

[28]Program Executive Officer Soldier, Rapid Fielding Initiative: History, Available from https://peosoldier.army.mil/rfi/history.asp; Internet; accessed on 15 February 2007.

[29]The Rapid Fielding Initiative: Equipping Soldiers to Succeed, AUSA Discussion Paper. August 2004, Available from http://www.ausa.org/webpub/DeptILW.nsf/byid/CCRN-6CCRMZ; Internet; accessed 17 March 2007.

Figure 8. Unit and Soldier Rapid Fielding Initiative Overview Requests

Source: Colonel Thomas Bryant, Project Director, Rapid Fielding Initiative, Rapid Fielding Initiative Overview to the 2005 Acquisition Senior Leaders and AMC Commanders Conference, Slide 5, 23 August 2005.

Rapid Fielding Initiative's Implementation

In October 2003, General Schoomaker directed RFI to expand to all forces deploying to OIF 2 and OEF 5 to ensure that deploying Soldiers would receive the increased capabilities of the provided RFI equipment. Schoomaker's intent was to have the identified equipment provided to the Soldier prior to deployment by the Army procurement system. It would be distributed by an organized program instead of ad hoc purchasing of equipment by units and individual Soldiers. Although the initiative provided near-term solutions to many major equipment deficiencies, Army leadership recognized large scale fielding would require a concentrated synchronized effort across the total force.

General Schoomaker's directive resulted in the requirement for a more defined and structured process for rapid fielding. The first step in expanding the program was to establish a standard list of capabilities that would provide predictable requirements for the Army and the United States industrial base.[30] The process of interviews, surveys, and after action reviews from deployed and deploying units had earlier resulted in a wide range of unit specific equipment requirements. The unit specific requirements were further refined as being location specific based on the wide variances in the types of terrain in Iraq and Afghanistan. Together, these factors resulted in an initial cumbersome and labor-intensive tracking methodology for determining what unit and Soldier required what piece of equipment going to what location. The RFI initiative required a unique program classification and planning factors in order to meet the CSA's intent. Similar to REF, a critical aspect of the initiative proved to be its classification as an "equipping" solution instead of a "fielding" solution which permits RFI reduce and compress the acquisition

[30]Program Executive Officer Soldier, Rapid Fielding Initiative: History, Available from https://peosoldier.army.mil/rfi/history.asp; Internet; accessed on 22 February 2007.

process.[31] These rules enabled RFI to purchase and equip different items without going through the entire conventional acquisition cycle.

The PEO Soldier RFI Operations Cell began planning operations in October 2003, to equip deploying United States Soldiers. To respond to the need for specialized equipment, the Army partnered with DoD research and development agencies, other services, and the Department of Energy's national laboratories, seeking answers to the challenges faced by Soldiers in the field. The Army looked beyond its usual contractors to companies that produce outdoor clothing, camping and hiking equipment to manufacturers of hunting gear, gun sights and electronic devices.[32]

The initial planning of the operations cell detailed the need to equip an average of 10,000 Soldiers per month; a facility to receive, package and ship the individual and unit equipment throughout CONUS and the combat zone; fielding teams to issue the equipment; and an industrial base to support the increased demand of numerous pieces of equipment.[33] The RFI operations cell determined and received from the Department of the Army leadership the following initial equipping planning priorities: OIF before OEF, BCTs before Support Personnel, and Reserve Component before Active Component Forces. Additionally, the BCTs would receive RFI items prior to their Mission Ready Exercise. Finally while focused on equipping OIF before OEF units, there was a concentrated effort capturing 100 percent of pre-deploying OEF Soldiers to reduce the logistical burden in Afghanistan.

The CSA's directive to equip all deploying Soldiers effectively quadrupled the original production and fielding requirements established in the RFI's original equipping plan. The large increase and the inability of the US industrial base to provide the required production amounts

---

[31]Kennedy, 1.

[32]Program Executive Officer Soldier, The Army's Rapid Fielding Initiative Delivers, Available from https://www.peosoldier.army.mil/docs/rfidelivers.pdf; Internet; accessed on 7 April 2007.

[33]Program Executive Officer Soldier, Rapid Fielding Initiative: History, Available from https://peosoldier.army.mil/rfi/history.asp; Internet; accessed on 17 February 2007.

required RFI to conduct equipping in theater for some deployed and deploying units.[34] An advance party went to theater in early January 2004, and by the end of the month facilities were secured and a process established for equipping units in conjunction with in-theater Reception, Staging, Onward-movement and Integration (RSOI) activities.[35]

By February 2004, the PEO's PMs for Soldier Equipment, Soldier Weapons, and Soldier Warrior had dramatically accelerated procurement of equipment and supplies from the United States industrial base to meet the CSA's directive to equip deploying Soldiers. The expanded RFI mission required the RFI Operations Cell at Fort Belvoir, Virginia, to implement new processes for coordinating and fielding the equipment to a greater number of Soldiers. The operations cell implemented a forward team located in Kuwait to conduct reconnaissance and coordination for operations in Iraq. This forward team facilitated the equipping of already deployed BCTs in the theater while efforts to equip units stateside prior to deployment almost doubled. This was critical in time savings and logistical savings because a full set of BCT RFI required seventy Air Force pallets and four C-17s to transport the pallets into the theater.[36] The process of Outside of the Continental United States (OCONUS) RFI distribution is outlined in the following diagram:

[34]Ibid.

[35]Ibid.

[36]Dave Cowan, Rapid Fielding Initiative Overview Brief to Precision Strike Association. 21 April 2004, Available from http://www.dtic.mil/ndia/2004precision/cowan.pdf; Internet; accessed on 6 April 2007.

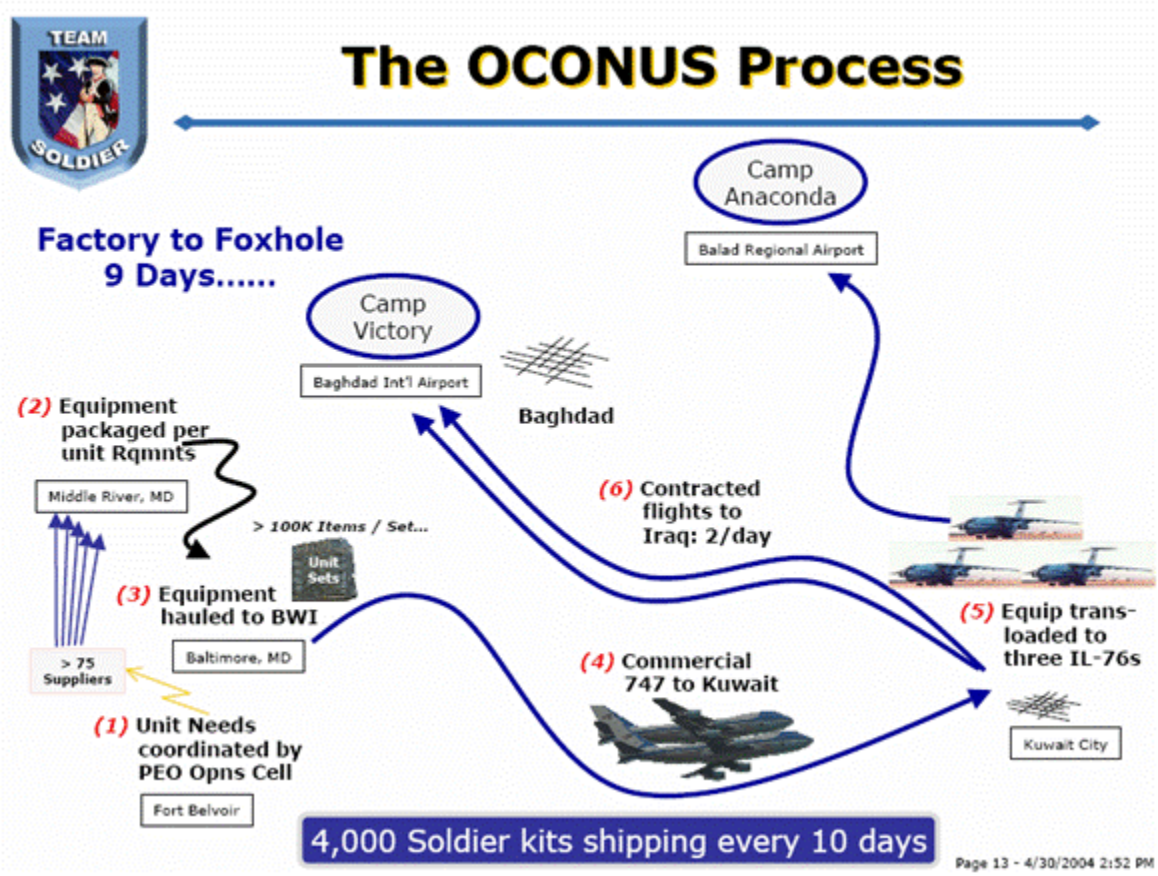

Figure 9. RFI OCONUS Process
Source: Dave Cowan, Rapid Fielding Initiative Overview Brief to Precision Strike Association. 21 April 2004, Available from http://www.dtic.mil/ndia/2004precision/ cowan.pdf; Internet; accessed on 6 April 2007.

In 2004, the CSA directed the expansion of RFI with a mandate to equip the Operating Army (840,000 Soldiers) with the current identified RFI equipment set by the end of FY 2007 through the use of supplemental funding.[37] The utilization of supplemental funding was in line with the Bush administration's overall war funding process. For planning purposes in FY 2005, the Army G-8 allocated $19.1 million per BCT and $9.1 million per associated Echelon Above Brigade (EAB). The planned fiscal year combat developer 2007 completion date coincides with

[37]Program Executive Officer Soldier, Rapid Fielding Initiative: History, Available from https://peosoldier.army.mil/rfi/history.asp; Internet; accessed on 17 February 2007.

the expiration of the planned supplemental funding.[38] The forecasted required number of Soldiers has since been adjusted from the original 840,000 to over 960,000 in order to equip the new end strength of the Operating Army. The potential for additional increases and equipping requirements beyond FY 2007 will depend on finalizing of United States foreign policy in Iraq and Afghanistan.

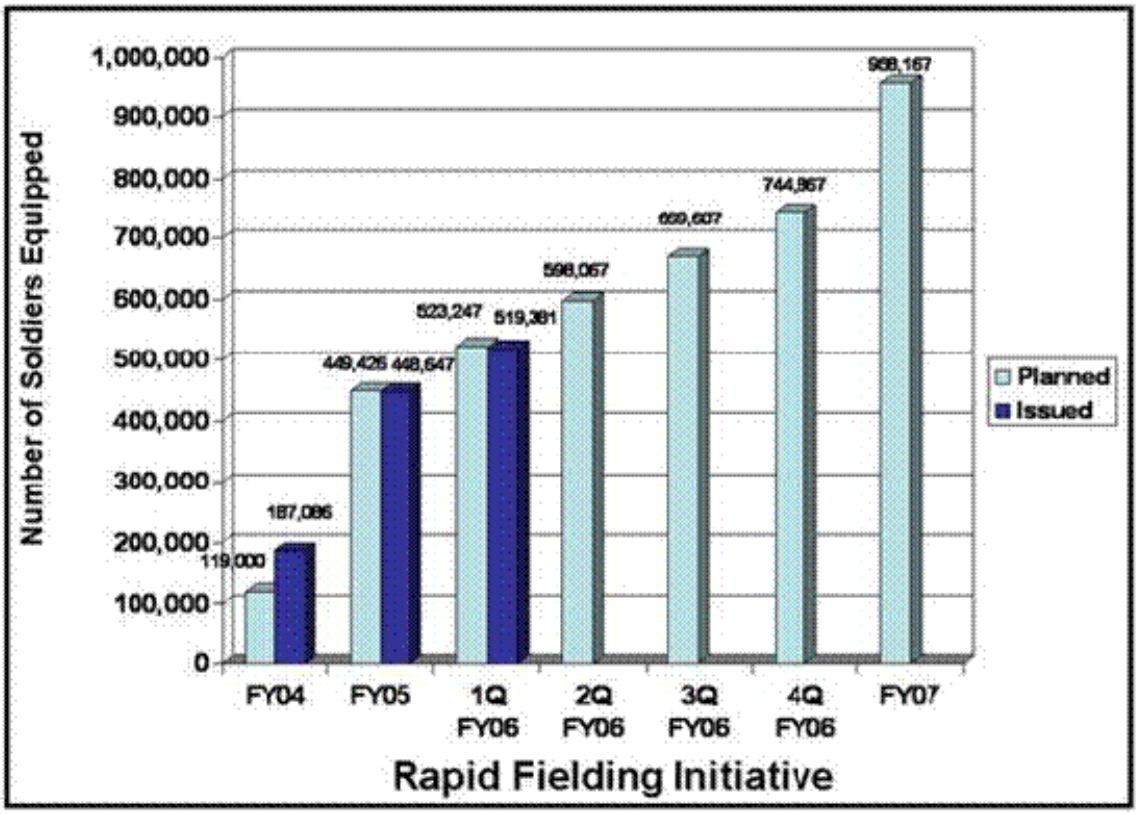

Figure 10. Rapid Fielding Initiative Timeline for Total Force
Source: Program Executive Officer Soldier, Database, Available from; https://peosoldier.army.mil/rfi/schedules.asp; Internet; accessed on 6 April 2007.

[38]Department of the Army, *2005 Army Weapons System Handbook* (Arlington, VA: Government Printing Office 2005), 228.

The current issue of RFI to Soldiers and units includes the following types of equipment based a continued evaluation of the operating environment of the Soldiers and units:

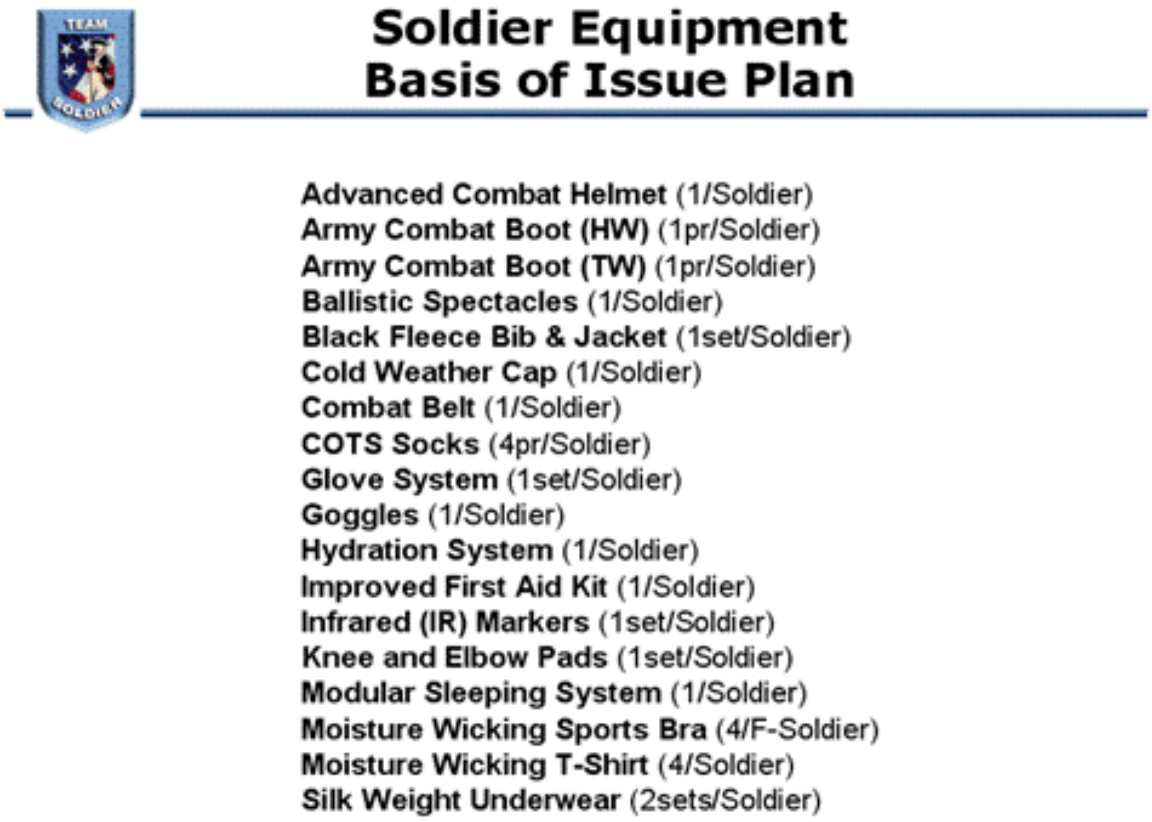

Figure 11. Rapid Fielding Initiative Current Equipment
Source: Program Executive Officer Soldier, Rapid Fielding Initiative - Equipment, Available from https://peosoldier.army.mil/rfi/equipment.asp#; Internet; accessed on 15 April 2007.

Figure 12. Rapid Fielding Initiative Current Equipment

Source: Program Executive Officer Soldier, Rapid Fielding Initiative - Equipment, Available from https://peosoldier.army.mil/rfi/equipment.asp#; Internet; accessed on 15 April 2007.

Rapid Fielding Initiative Collaboration

The Executive branch, Legislative branch, and the Army's senior leadership are collectively responsible for the success through their collaborative efforts in responding to the needs of deployed units and Soldiers. The Army's senior leadership recognized the importance of providing the necessary equipment to the Soldiers in the field in order to be effective in combat operations in Iraq and Afghanistan. The senior leadership ensured that the testing, evaluation, procurement and acquisition portions of the traditional Army acquisition and logistical institutions provided the most swift and responsive support to the RFI program. The idea that individual United States Soldiers were spending their own money on equipment in order to conduct combat operations did not present a positive image to the American public. The Army

recognized that Soldiers purchased needed equipment during deployments and instituted a program to reimburse them for certain items. Soldiers can now file claims and receive reimbursement for protective equipment privately purchased between 11 September 2001, and 2 April 2005. The reimbursement is for service members who were not issued equivalent equipment prior to their deployment in OIF or OEF. The Army began reimbursing Soldiers 21 November up to $1,100 for any single item such as protective body armor, combat helmets, ballistic eye protection, hydration systems, summer weight gloves, and knee and elbow pads.[39] These items are now part the current RFI issue. The knowledge that United States Soldiers purchased equipment for combat perhaps most likely contributed to the Executive and Legislative bodies support for the RFI and its funding.

Friction in War

"Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war. . . . Friction is the only concept that more or less corresponds to the factors that distinguish real war from war on paper."[40] Clausewitz' term friction is caused mainly by the danger of war, by war's demanding physical efforts, and by the presence of unclear information or the fog of war. The dangerous nature of war means that in an environment of sweat, blood, bullets, and bombs, "the light of reason is refracted in a manner quite different from that which is normal in academic speculation." It takes a well trained, equipped, and confident Soldier to make sound decisions during combat operations. Physical effort in war also produces friction: "If no one had the right to give his views on military operations except when he is frozen, or faint from heat and thirst, or depressed from privation and fatigue, objective and accurate views would be even rarer than they are." The simple fact is that being a Soldier involved in combat is extremely

[39]Paul Cucuzzella, "Soldiers May Be Reimbursed for Protective Gear," *Army News Service*, 13 January 2006, Available fromhttp://www.military.com/features/0,15240, 85396,00.html; Internet; accessed on 7 April 2007.

[40]Carl von Clausewitz, *On War* (Princeton, NJ: Princeton University Press, 1984).

rigorous and physically demanding. The terrain and weather conditions usually compound these physical hardships. Ambiguous information in war is a third element which Clausewitz states distinguishes real war from war in theory. The fight for intelligence and clarity on the battlefield by commanders is a high priority in order to maximize the potential for mission success and reduce casualties. All three components exist in the current contemporary operating environment of Iraq and Afghanistan and most likely in future conflicts as well.

The reduction of any of these components is a matter of priority for operational and tactical commanders in order to improve the likelihood of mission success. The REF and RFI programs have the consequences of reducing friction in Iraq and Afghanistan. The different items procured by the programs for commanders and their unit Soldiers can usually be seen as mitigating one of the above Clausewitzian components of friction.

Conclusions

The United States military is an incredible organization with a myriad of systems, organizations, and internal components that address the requirement placed before it to win the nation's wars. This is a task that is not negotiable with the American citizens nor should it be. In order to prepare for and to achieve this task, the United States Army has a legacy of improving its military effectiveness through its systems, organizations, and internal components. Military effectiveness is composed of several different variables. These variables include recruitment, training, doctrine, organization, leadership, equipment, and system of command. Providing Soldiers with the necessary vital tools or capabilities now verses later through a rapid fielding process is one of the factors in increasing the combat effectiveness of the United States military forces. The Rapid Equipping Force and Rapid Fielding Initiative are two programs which bridge the gap between the traditional lengthy acquisition process and warfighting's immediate operational equipment requirements.

There is the significant issue of funding for these programs and military's operations currently in Iraq and Afghanistan. The issue of funding the military is a highly sensitized political and economical interaction. It is beyond the scope of this paper to determine the manner in which we continue to fund these types of rapid fielding programs and the current operations in theater. If there is an assumption that the United States will continue to maintain forces in at least the current theaters at some level throughout the near future, there will still be the need to maintain at least a theater-specific capability of providing equipment in a more rapid time frame than the tradition five to seven year life cycle acquisition.

The enemy will continue to adapt its tactics to counter the United States military forces whether it is in the current theater or another theater in the future. If the enemy is a conventional threat or an asymmetrical threat, the capability of the United States Army to respond with improved equipment will be one of the many facets that the nation can bring to the fight to increase the military effectiveness of the Army.

Bibliography

Ackerman, Robert K. “Dedicated Army Force Speeds Technology To Warfighters.” *Signal* (June 2006): 57.

Cowan, Dave. Rapid Fielding Initiative Overview Brief to Precision Strike Association, 21 April 2004. Available from http://www.dtic.mil/ndia/2004precision/cowan.pdf. Internet. Accessed on 6 April 2007.

Cucuzzella, Paul. “Soldiers May Be Reimbursed for Protective Gear.” *Army News Service*, 13 January 2006. Available fromhttp://www.military.com/features/0,15240, 85396,00.html. Internet. Accessed on 7 April 2007.

Defense Acquisition University. *Introduction to Defense Acquisition Management*. 7th ed. Fort Belvoir, VA: Defense Acquisition University Press, 2005. Available from http://www.dau.mil/pubs/gdbks/Intro_2Def_Acq_Mgmt_7th_Ed.pdf. Internet. Accessed on 18 March 2007.

_____. *Glossary: Defense Acquisition Acronyms and Terms*. Fort Belvoir, VA: Defense Acquisition University Press, July 2005. Available from http://akss.dau.mil/jsp/glossary.pdf. Internet. Accessed on 15 March 2007.

Department of the Army. Army Regulation 70-1, *Army Acquisition Policy*. Washington, DC: Government Printing Office, 2003.

_____. *2005 Army Weapons System Handbook*. Arlington, VA: Government Printing Office, 2005.

_____. *2006 Posture Statement*. Washington, DC: Government Printing Office, 2006.

_____. 2006 Army Modernization Plan. Available from http://www.army.mil/features/MODPlan/2006/. Internet. Accessed on 15 March, 2007.

Farrell, Lawrence P. “Technology Base Focused on ‘Rapid Fielding’ Efforts.” *National Defense* (August 2003): 6.

Henry, Joe. “REF Strategic Plans Consultant.” *Army Magazine* (August 2004): 40.

Kennedy, Ted. “2005 TRADOC Seeks Wartime Solutions From Rapid Equipping Force.” *Army Magazine* (August 2004): 29.

Kennedy, Tim. “Rapid Fielding Team Tasked to Transform Army Acquisition.” *National Defense Magazine* (February 2004): 1.

Krepinevich, Andrew. The Bush Administration’s Call for Defense Transformation: A Congressional Guide, 19 June 2001. Available from http://www.csbaonline.org/4Publications/PubLibrary/H.20010619.The_Bush_Administr/H.20010619.The_Bush_Administr.php. Internet. Accessed on 5 April 2007.

Program Executive Officer Soldier. Rapid Fielding Initiative: History. Available from https://peosoldier.army.mil/rfi/history.asp. Internet. Accessed on 17 February 2007.

_____. The Army's Rapid Fielding Initiative Delivers. Available from https://www.peosoldier.army.mil/docs/rfidelivers.pdf. Internet. Accessed on 7 April 2007.

The Rapid Fielding Initiative: Equipping Soldiers to Succeed, AUSA Discussion Paper. August 2004. Available from http://www.ausa.org/webpub/DeptILW.nsf/byid/CCRN-6CCRMZ. Internet. Accessed on 17 March 2007.

United States Joint Force Command. What is Transformation. Available from http://www.jfcom.mil/about/transform.html. Internet. Accessed on 5 April 2007.

US Army Rapid Equipment Fielding. Webpage. Available from http://www.ref.army.mil/textonly/default.html. Internet. Aaccessed on 5 April 2007.

US Department of Defense. DoD 5000.52-M, Acquisition Career Development Program (1995). Available from http://www.dtic.mil/whs/directives/corres/pdf2/p500052m.pdf. Internet. Accessed on 15 March 2007.

von Clausewitz, Carl. *On War*. Princeton, NJ: Princeton University Press, 1984.